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EXAMINER	
THANGAVELU, KANDASAMY	

ART UNIT	PAPER NUMBER
2123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/657,871	BRUMITT ET AL.	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-16,27,28,34-48,50 and 51* is/are rejected.

7)☒ Claim(s) *10,17-26,29-33 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2000 and 19 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This communication is in response to the Applicants' Response mailed on August 19, 2004. Claims 1, 4, 8-10, 12-13, 18, 21, 24, 27, 42, 43, 48 and 51 were amended. Claims 1-51 of the application are pending. This office action is made final.

Drawings

2. Acknowledgment is made of the corrected drawing for Fig. 5 sent by the Applicants on August 19, 2004. The corrected drawing is accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-7, 11-13, 27, 28, 34-48 and 50-51 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Cureton et al.** (U.S. Patent application 2002/0116200).

4.1 **Cureton et al.** teaches satellite based global positioning system for feedlot computer network and method. Specifically, as per claim 1, **Cureton et al.** teaches a computer-implemented process for providing a geometric model database for use in a ubiquitous computing environment to respond to queries about the environment's geometric state (Page 2, Para 0012, Para 0014, Para 0015 and Para 0016; Pages 2 and 3, Para 0019); comprising using a computer to perform the following process actions:

accepting information about the geometric state of the environment (Page 2, Para 0015 and Para 0016);

building a geometric model database of the environment based on an initial input of the information (Page 2, Para 0015 and Para 0016);

establishing a set of entities that are of interest in the environment, each entity of which is represented by at least a coordinate frame unique to that entity (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089);

characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity, rather than in terms of a coordinate frame common to all entities (Page 9, Para 0086; Page9, Para 0090);

maintaining the geometric model database by modifying it based on the input of updated information about the geometric state of the environment (Page 2, Para 0016; Pages 2 and 3, Para 0019); and

responding to queries concerning the geometric relationships between entities in the environment using the geometric model database (Page 2, Para 0015 and Para 0016).

Per Claim 2: **Cureton et al.** also teaches the process action of accepting information about the geometric state of the environment (Page 2, Para 0015 and Para 0016); comprises the actions of:

inputting identifying information from an external source concerning an object existing in the environment, referred to as an entity, which is to be included in the geometric model database (Page 2, Para 0015 and Para 0016); the information comprising the entity's extent which is one of (i) the physical size of the entity, or (ii) the service region of the entity (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

inputting measurements, each of which defines the entity's relationship to one other entity in the geometric model database (Page 2, Para 0015 and Para 0017).

Per Claim 3: **Cureton et al.** teaches the entity represents a camera and the camera's extent corresponds to a service region constituting a field of view of the camera (Page 2, Para 0017).

Per Claim 4: **Cureton et al.** teaches the process action of building the geometric model database (Page 2, Para 0015 and Para 0016); comprises the actions of:

further representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089) and an extent, wherein the extent defines one of (i) the physical

size of the entity, or (ii) the service region of the entity (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement defining the entity's relationship to at least one of the other entities (Page 9, Para 0086; Page 9, Para 0090).

Per Claim 5: **Cureton et al.** teaches the process action of establishing a set of entities comprises the actions of accepting identifying information from an external source concerning an object existing in the environment, referred to as an entity, which is to be included in the geometric model database (Page 2, Para 0015 and Para 0016);

the information comprising the entity's extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112);

assigning a unique entity identifier to each entity which is then used by the geometric model database and the external source in referring to the entity (Page 2, Para 0015; Page 2 and 3, Para 0019); and

making the entity identifiers available to the external source (Page 2, Para 0015 and Para 0016).

Per Claim 6: **Cureton et al.** teaches an external source provides more than one extent for an entity, and wherein the process action of assigning a unique entity identifier to each entity, comprises the actions of assigning a separate identifier to each entity-extent combination; and

setting the measurement between entity-extent combinations associated with the same entity to zero (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112).

Per Claim 7: **Cureton et al.** teaches the process action of representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089); and an extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

a process action of representing each entity by a coordinate frame having a fixed geometric relationship to the physical object associated with the entity (Page 8, Para 0084; Page 9, Para 0086).

Per Claim 11: **Cureton et al.** teaches the process action of representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089); and an extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

a process action of characterizing an entity's extent as a point having a prescribed geometric relationship to the origin of the entity's coordinate frame ((Page 2, Para 0017; Page 8, Para 0079; Page 9, Para 0086).

Per Claim 12: **Cureton et al.** teaches the process action of characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement defining the entity's relationship to one of the other entities (Page 9, Para 0086; Page 9, Para 0090); and

an action of using a measurement specifying the position and orientation of each other entity's coordinate frame origin in terms of the coordinate frame of the entity under consideration (Page 8, Para 0084; Page 9, Para 0086).

Per Claim 13: **Cureton et al.** also teaches the process action of characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement defining the entity's relationship to one of the other entities (Page 9, Para 0086; Page 9, Para 0090); and

assigning a unique measurement identifier to each measurement which is then used by the geometric model database and the external source in referring to the measurement defining the entity's relationship to another entity; and making the measurement identifiers available to the external source (Page 2, Para 0015 and Para 0016).

Per Claim 27: **Cureton et al.** teaches the process action of responding to queries concerning the geometric relationships between entities in the environment (Page 2, Para 0015 and Para 0016), comprises an action of, upon receiving a request from an external source to identify the extent of a particular entity, providing the extent information to the external source (Page 2, Para 0015 and Para 0016).

Per Claim 28: **Cureton et al.** also teaches the process action of responding to queries concerning the geometric relationships between entities in the environment (Page 2, Para 0015 and Para 0016), comprises an action of:

waiting for incoming queries from external sources for requests concerning the relative geometric relationship between two entities (Page 2, Para 0016);

whenever a request concerning the relative geometric relationship between two entities is received, determining if a direct measurement exists between the two entities involved in the request (Page 2, Para 0015 and Para 0016);

whenever the direct measurement exists, providing information concerning the measurement to the external source making the request(Page 2, Para 0016).

Per claim 34: **Cureton et al.** also teaches the process action of responding to queries concerning the geometric relationships between entities in the environment (Page 2, Para 0015 and Para 0016) comprises an action of upon receiving a standing request from an external source, responding to the request each time a prescribed event occurs (Page 2, Para 0014 and Para 0015).

4.2 As per claim 35, **Cureton et al.** teaches a system for providing a geometric model database for use in a ubiquitous computing environment to respond to queries about the environment's geometric state (Page 2, Para 0012, Para 0014, Para 0015 and Para 0016; Pages 2 and 3, Para 0019); comprising:

at least one general purpose computing device; and a computer program comprising program modules executable by the computing device or devices, wherein the computing device or devices are directed by the program modules of the computer program (Page 2, Para 0014, Para 0015 and Para 0016); to

input information about the geometric state of the environment from at least one external source (Page 2, Para 0015 and Para 0016);

establish a set of entities that represent objects in the environment based on an initial input of the information (Page 2, Para 0015 and Para 0016); and

represent each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089); and an extent wherein the extent is based on an initial input of the information (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

characterize the location of each entity in the environment relative to other entities using a measurement defining the entity's relationship to at least one of the other entities (Page 9, Para 0086; Page 9, Para 0090).

Per claim 36: **Cureton et al.** teaches the system comprising a program module for storing as initializing data in a non-volatile initializing database, information concerning the entities and their extents (Page 2, Para 0014, Para 0015 and Para 0016);

initializing data concerning the measurements between entities contained within the geometric model database (Page 2, Para 0014, Para 0015 and Para 0016); and

the program module for inputting information about the geometric state of the environment comprises an action of inputting the stored initializing data from the non-volatile database at the start of the process for providing a geometric model database (Page 2, Para 0015 and Para 0016; Fig 2B3-2, Item 52).

Per claim 37: **Cureton et al.** teaches that the program module for storing initializing data comprises a sub-module for storing only information concerning entities, extents, and measurements that is anticipated not to change substantially over time (Page 2, Para 0015 and Para 0016; Fig 2B3-2, Item 52).

Per claim 38: **Cureton et al.** teaches the program module for inputting information about the geometric state of the environment comprises a sub-module for inputting update information characterizing a current geometric state of the environment (Page 2, Para 0015 and Para 0016).

Per claim 39: **Cureton et al.** teaches the program module for storing initializing data comprises a sub-module for storing information concerning the entities, their extents, and the measurements representative of the most current geometric state of the environment (Page 2, Para 0015 and Para 0016).

Per Claim 40: **Cureton et al.** also teaches the program module for establishing a set of entities comprises a sub-module for assigning a unique entity identifier to each entity entered into the geometric model database, which is then used by the geometric model database and external sources in referring to the entity (Page 2, Para 0015); and

that the program module for characterizing the location of each entity in the environment relative to other entities using a measurement comprises a sub-module for assigning a unique measurement identifier to each measurement entered into the geometric model database, which is

then used by the geometric model database and the external sources in referring to the measurement (Page 2, Para 0015 and Para 0016).

Per Claim 41: **Cureton et al.** also teaches that the program module for storing initializing data further comprises sub-modules for storing the entry and measurement identifiers assigned to the entities (Page 2, Para 0015 and Para 0016);

measurements comprising the initializing data in a non-volatile initializing database (Page 2, Para 0015 and Para 0016; Fig 2B3-2, Item 52); and

making the entity and measurement identifiers available to the external sources (Page 2, Para 0015 and Para 0016).

4.3 As per claim 42, **Cureton et al.** teaches a computer-readable medium having computer-executable instructions for providing a geometric model database for use in a ubiquitous computing environment to respond to queries about the environment's geometric state (Page 2, Para 0012, Para 0014, Para 0015 and Para 0016; Pages 2 and 3, Para 0019); the computer-executable instructions comprising:

inputting information about the geometric state of the environment from at least one external source (Page 2, Para 0015 and Para 0016);

building a geometric model database of the environment based on an initial input of the information (Page 2, Para 0015 and Para 0016); and

establishing a set of entities that are of interest in the environment, each entity of which is represented by at least a coordinate frame unique to that entity (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089);

characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity, rather than in terms of a coordinate frame common to all entities (Page 9, Para 0086; Page9, Para 0090);

maintaining the geometric model database by modifying it based on the input of updated information about the geometric state of the environment (Page 2, Para 0016; Pages 2 and 3, Para 0019).

Per Claim 43: **Cureton et al.** teaches that the instruction for building the geometric model database, comprises sub-modules for:

further representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089) and an extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112); and

characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement defining the entity's relationship to at least one of the other entities (Page 9, Para 0086; Page 9, Para 0090).

Per claim 44: **Cureton et al.** teaches that the instruction for inputting information about the geometric state of the environment comprises a sub-module for inputting update information characterizing a current geometric state of the environment (Page 2, Para 0015 and Para 0016).

Per claim 45: **Cureton et al.** teaches that the instruction for maintaining the geometric model database, comprises a sub module for updating the geometric model database on an on-going basis, using the inputted update information characterizing a current geometric state of the environment (Page 2, Para 0015 and Para 0016);

to ensure to the best degree possible given the update information, that only entities currently existing in the environment and their associated current extents are included in the database (Page 2, Para 0016); and

measurements between the current entities are representative of the current geometric relationships between the current entities (Page 9, Para 0086; Page 9, Para 0090).

Per claim 46: **Cureton et al.** teaches that the sub module for establishing a set of entities, comprises sub-modules for assigning a unique entity identifier to each entity entered into the geometric model database, which is then used by the geometric model database and external sources in referring to the entity (Page 2, Para 0015); and

making the entity identifiers available to the external sources (Page 2, Para 0015 and Para 0016).

Per claim 47: **Cureton et al.** teaches that the sub-module for establishing a set of entities, further comprises a sub-module for deactivating existing entity identifiers associated with entities that are indicated in the update information as no longer being in the environment (Page 2, Para 0015)

Per claim 48: **Cureton et al.** teaches the sub-module for characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement (Page 9, Para 0086; Page 9, Para 0090);

sub-modules for assigning a unique measurement identifier to each measurement entered into the geometric model database, which is then used by the geometric model database and external sources in referring to the measurement (Page 2, Para 0015 and Para 0016); and

making the measurement identifiers available to the external sources (Page 2, Para 0015 and Para 0016).

Per claim 50: **Cureton et al.** teaches the sub-module for characterizing the location of each entity in the environment relative to other entities using a measurement (Page 9, Para 0086; Page 9, Para 0090);

sub-modules for assigning a unique measurement identifier to each measurement entered into the geometric model database, which is then used by the geometric model database and external sources in referring to the measurement (Page 2, Para 0015 and Para 0016); and

making the measurement identifiers available to the external sources (Page 2, Para 0015 and Para 0016).

Per claim 51: **Cureton et al.** teaches the sub-module for characterizing the location of each entity in the environment in terms of the coordinate frame of at least one other entity using a measurement (Page 9, Para 0086; Page 9, Para 0090);

sub-modules for whenever a new current measurement is provided in the inputted update information, using it to replace the corresponding measurement already existing in the geometric model database (Page 2, Para 0016); and

assigning the measurement identifier associated with the existing measurement to the new current measurement (Page 2, Para 0015 and Para 0016).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Cureton et al.** (U.S. Patent application 2002/0116200) in view of **Kacyra et al.** (U.S. Patent 6,473,079).

7.1 As per Claim 8, **Cureton et al.** teaches the process of claim 4. **Cureton et al.** teaches the process action of representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089); and an extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112).

Cureton et al. does not expressly teach a process action of characterizing an entity's extent as a polygonal region within the environment defined in terms of the entity's coordinate frame whenever an external source provides information as to the shape of the entity's extent. **Kacyra et al.** teaches a process action of characterizing an entity's extent as a polygonal region within the environment defined in terms of the entity's coordinate frame whenever an external source provides information as to the shape of the entity's extent (CL23, L55-67), as that allows indicating which portions of the scene are to be scanned by the camera by indicating a sequence of points that represent the bounding polygon of the scan region (CL3, L4-5). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Kacyra et al.** that included a process action of characterizing an entity's extent as a polygonal region within the environment defined in terms of the entity's coordinate frame whenever an external source provides information as to the shape of the entity's extent. The artisan would have been motivated because that would allow indicating which portions of the scene were to be scanned by the camera by indicating a sequence of points that represented the bounding polygon of the scan region.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Cureton et al.** (U.S. Patent application 2002/0116200) in view of **Gelphman** (U.S. Patent 6,556,783).

8.1 As per Claim 9, **Cureton et al.** teaches the process of claim 4. **Cureton et al.** teaches the process action of representing each entity by a coordinate frame (Fig. 1; Page 8, Para 0084; Page 9, Para 0086; Page9, Para 0089); and an extent (Page 2, Para 0017; Page 8, Para 0079; Page 13, Para0112).

Cureton et al. does not expressly teach a process action of characterizing an entity's extent as a line segment within the environment defined in terms of the entity's coordinate frame whenever an external source provides information indicating the entity's extent to be such a line segment. **Gelphman** teaches a process action of characterizing an entity's extent as a line segment within the environment defined in terms of the entity's coordinate frame whenever an external source provides information indicating the entity's extent to be such a line segment (CL5, L11-32), as that allows complex paths (extents) to be represented by multiple paths which are simpler to program (CL5, L18-19). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Gelphman** that included a process action of characterizing an entity's extent as a line segment within the environment defined in terms of the entity's coordinate frame whenever an external source provides information indicating the entity's extent to be such a line segment. The artisan would have been motivated because that would allow complex paths (extents) to be represented by multiple paths which are simpler to program.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Cureton et al.** (U.S. Patent application 2002/0116200) in view of **Cox et al.** (U.S. Patent 5,363,305).

9.1 As per Claim 14, **Cureton et al.** teaches the process of claim 12. **Cureton et al.** teaches the process action of using a measurement specifying the position and orientation of each other entity's coordinate frame origin in terms of the coordinate frame of the entity under consideration (Page 8, Para 0084; Page 9, Para 0086).

Cureton et al. does not expressly teach the process action comprises an action of assigning a spatial uncertainty estimate to the measurement which is indicative of the accuracy of the method used to obtain the measurement. **Cox et al.** teaches the process action comprises an action of assigning a spatial uncertainty estimate to the measurement which is indicative of the accuracy of the method used to obtain the measurement (CL2, L31-57), as that allows the entities to be observed in successive camera measurements and attach a measure of credibility to each measurement (CL2, L39-57). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Cox et al.** that included the process action comprising an action of assigning a spatial uncertainty estimate to the measurement which was indicative of the accuracy of the method used to obtain the measurement. The artisan would have been motivated because that would allow the entities to be observed in successive camera measurements and attach a measure of credibility to each measurement.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Cureton et al.** (U.S. Patent application 2002/0116200) in view of **Cox et al.** (U.S. Patent 5,363,305), and further in view of **Davison et al.** (U.S. Patent 6,516,099).

10.1 As per Claim 15, **Cureton et al.** and **Cox et al.** teach the process of claim 14. **Cureton et al.** teaches that each measurement is provided to the geometric model database by an external source (Page 2, Para 0014 and Para 0015); and

the process action of characterizing the location of each entity in the environment relative to other entities using a measurement (Page 9, Para 0086; Page 9, Para 0090).

Cureton et al. does not expressly teach that more than one measurement defining an entity's relationship to another entity may be provided by separate external sources. **Davison et al.** teaches that more than one measurement defining an entity's relationship to another entity may be provided by separate external sources (CL1, L21-23), as that allows the most accurate relationship being selected (CL2, L31-32). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Davison et al.** that included more than one measurement defining an entity's relationship to another entity to be provided by separate external sources. The artisan would have been motivated because that would allow allows the most accurate relationship being selected.

Cureton et al. does not expressly teach an action of, whenever more than one measurement defining an entity's relationship to another entity is received, using only the measurement having the lower uncertainty. **Davison et al.** teaches an action of, whenever more

than one measurement defining an entity's relationship to another entity is received, using only the measurement having the lower uncertainty (CL2, L27-32), as that allows the most accurate relationship being selected (CL2, L31-32). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Davison et al.** that included an action of, whenever more than one measurement defining an entity's relationship to another entity is received, using only the measurement having the lower uncertainty. The artisan would have been motivated because that would allow the most accurate relationship being selected.

10.2 As per Claim 16, **Cureton et al.** and **Cox et al.** teach the process of claim 14. **Cureton et al.** teaches that each measurement is provided to the geometric model database by an external source (Page 2, Para 0014 and Para 0015); and

the process action of characterizing the location of each entity in the environment relative to other entities using a measurement (Page 9, Para 0086; Page 9, Para 0090).

Cureton et al. does not expressly teach that more than one measurement defining an entity's relationship to another entity may be provided by separate external sources. **Davison et al.** teaches that more than one measurement defining an entity's relationship to another entity may be provided by separate external sources (CL1, L21-23), as that allows the most accurate relationship being selected (CL2, L31-32). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Davison et al.** that included more than one measurement defining an entity's relationship to another entity to be provided by separate external sources. The artisan would

have been motivated because that would allow allows the most accurate relationship being selected.

Cureton et al. does not expressly teach an action of, whenever more than one measurement defining an entity's relationship to another entity is received, arbitrarily choosing one of the measurements for use in characterizing the locations. **Davison et al.** teaches an action of, whenever more than one measurement defining an entity's relationship to another entity is received, arbitrarily choosing one of the measurements for use in characterizing the locations (CL2, L39-46), as that allows a selection of different relationships (CL2, L45-46). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the process of **Cureton et al.** with the process of **Davison et al.** that included an action of, whenever more than one measurement defining an entity's relationship to another entity is received, arbitrarily choosing one of the measurements for use in characterizing the locations. The artisan would have been motivated because that would allow a selection of different relationships.

Allowable Subject Matter

11. Claims 10, 17-26, 29-33 and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicants' amendments filed on August 19, 2004 have been fully considered. Applicant's arguments, filed on August 19, 2004 under 35 U.S.C. 102 (e) and 103 (a) are not persuasive.

12.1 As per the applicant's argument that "the rejected claims, among other things, claim that building of a geometric model database includes, "establishing a set of entities that are of interest in the environment, ***each entity of which is represented by at least a coordinate frame unique to that entity***, and characterizing the location of each entity in the environment in terms of the ***coordinate frame of at least one other entity, rather than in terms of a coordinate frame common to all entities***; ... the function of the global coordinate system is to provide a reference framework within which the position of all real objects in the feedlot can be specified; ... granted that some of the entities in the feedlot geometric model also have local coordinate systems, ... however, ***these local coordinate systems are not used exclusively by the geometric feedlot model to characterize the location of other entities*** as claimed by the application; ... any characterization of the location of an entity in terms of a local coordinate system of another entity, is also accompanied by a characterization of the same entity in terms of a global coordinate system; ... the claimed geometric model database requires that ***each entity be represented by a coordinate frame unique to that entity***...a prima facie case of anticipation is established only when the examiner can show that the cited reference teaches each of the claimed elements of a rejected claim; the examiner cannot show that the Cureton reference teaches the

claimed feature whereby building the geometric model database includes establishing a set of entities that are of interest in the environment, ***each entity of which is represented by at least a coordinate frame unique to that entity***, and characterizing the location of each entity in the environment in terms of the ***coordinate frame of at least one other entity, rather than in terms of a coordinate frame common to all entities;*** the rejected claims recite features that are not taught in the cited art, and as such a prima facie case of anticipation cannot be established", the Examiner respectfully disagrees.

The applicants argue that they do not use or need ***of a coordinate frame common to all entities,*** which is contrary to what is specified in the specification. Specification, Page 3, Line 27 to Page 4, Line 2 state that entity identification information is provided to the geometric model program from ***external programs***; ... the entity identifier information is provided back to the outside program which introduced the entity... the ID is used by the outside programs when updating information about an entity. Page 4, Lines 6-11 state that the location of an entity in the physical world is defined using ***measurements***; ... a measurement describes the position and orientation of one entity's coordinate frame, ***expressed in terms of another entity's coordinate frame***; ***measurements originating at an entity's frame are expressed in terms of that frame.*** Page 9, Line 2 states that the outside programs input updated measurements. Page 9, Lines 15-18 state that the ubiquitous computing environment is ***dynamic in nature***; and the outside programs feed entity, measurement and extent information into the geometric model program to supply this information each time. Page 26, Lies 15-16 state that the first entity can be any one in the loop for which ***an actual location corresponding to the origin of the frame has been previously specified.***

Therefore the examiner takes the position that the ***actual location of the origin of the frame for the first entity frame*** is previously specified by an ***external program***. Since the location of an entity in the physical world is defined using ***measurements*** and a measurement describes the position and orientation of one entity's coordinate frame, ***expressed in terms of another entity's coordinate frame,*** it would be obvious to one of ordinary skill in the art that the location of the origin of the frame of the first entity frame is specified in terms of another entity's coordinate frame. What is the "another entity" for the first entity? It is the ***external entity*** provided by the external program. Once the location of the first entity's coordinate frame is specified in terms of the origin of this external entity, one of elementary or beginner's knowledge in analytical geometry would be able to determine the next entity's coordinate frame location using the measurements from the origin of the first entity. The procedure can be repeated for all other entities. For all such entities, the external entity provides the common coordinate frame, though the applicants deny this. Therefore, the applicants ***do not use the local coordinates exclusively to characterize the location of other entities.***

As per the applicants' argument that the applicants' claim requires ***each entity to be represented by at least a coordinate frame unique to that entity***, and the Cureton reference does not use a local coordinate system for the tagged animals, the examiner takes the position that there is no component of the animal that moves relative to the center point of the animal that is of interest to the feedlot operator; and there is no component whose position relative to the center point of the animal is of interest. If there is such a component whose movement relative to the center point of the animal is of interest to the feedlot operator or there is a component whose position is of interest, one of ordinary skill in the art would have used the method of using a local

coordinate system for the feedlot vehicles or the feedlot, to the animal also. Sine the concept using the local coordinate system is taught by Cureton for some entities in the feedlot, it would be obvious to one of ordinary skill in the at to extend it to any other entity when there is a benefit in doing so.

Conclusion

ACTION IS FINAL

13. Applicant's arguments, filed on August 19, 2004 under 35 U.S.C. 102 (e) and 103 (a) are not persuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu
Art Unit 2123
December 18, 2004

KEVIN L. TESKA
SUPERVISORY
PATENT EXAMINER